

Claims:

1. A method for arbitrating bandwidth in a communications switch, comprising:

 - generating a repeating data frame having a plurality of rows;
 - making requests during row N for space in row N+1; and
 - granting requests through an out-of-band link.

2. A method according to claim 1, wherein:
each request includes through-the-switch routing information
and priority level information.

3. A method according to claim 2, further comprising:

 - buffering the request at each stage of the switch;
 - discarding low priority requests when the buffer reaches a threshold.

4. A method according to claim 3, wherein:
said step of granting requests includes returning requests
which have not been discarded before reaching the egress of the
switch.

5. A method according to claim 1, wherein:
each request for space is for a 52-byte chunk of space.

6. A method according to claim 5, wherein bandwidth is arbitrated among ATM cells and variable length packets, said method further comprising:

d) segmenting each packet larger than 52-bytes into a plurality of 52-byte chunks.

7. A method according to claim 6, wherein:

each request includes through-the-switch routing information and priority level information.

~~8. A method according to claim 7, further comprising:~~

e) buffering the request at each stage of the switch;

f) discarding low priority requests when the buffer reaches a threshold.

9. A method according to claim 8, wherein:

said step of granting requests includes returning requests which have not been discarded before reaching the egress of the switch.

10. A method according to claim 9, further comprising:

g) discarding requests for all following segments of a packet when a request for one segment of the packet has been discarded.

11. A method according to claim 1, wherein:
said requests are made in-band.

12. A method according to claim 1, wherein:
said requests are made out-of-band.

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200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0